HIGH SPEED ANALOG TO DIGITAL CONVERTER

ABSTRACT OF THE DISCLOSURE

An analog to digital converter includes a reference ladder, a track-and-hold amplifier tracking an input signal with its output signal during the phase ϕ_1 and holding a sampled value during, a coarse analog to digital converter having a plurality of coarse amplifiers each inputting a corresponding tap from the reference ladder and the output signal, a fine analog-to-digital converter having a plurality of fine amplifiers inputting corresponding taps from the reference ladder and the output signal, the taps selected based on outputs of the coarse amplifiers, a clock having phases ϕ_1 and ϕ_2, a circuit responsive to the clock that receives the output signal, the circuit substantially passing the output signal and the corresponding taps to the fine amplifiers during the phase ϕ_2 and substantially rejecting the output signal and the corresponding taps during the phase ϕ_1, and an encoder converting outputs of the coarse and fine amplifiers to an N-bit digital signal representing the input signal.